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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,338	02/18/2004	James Lee Bailey	3142-6178US	5407
24247	7590	02/14/2007	EXAMINER	
TRASK BRITT			MILLIKIN, ANDREW R	
P.O. BOX 2550			ART UNIT	PAPER NUMBER
SALT LAKE CITY, UT 84110			2837	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/14/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/782,338	BAILEY, JAMES LEE	
	Examiner	Art Unit	
	Andrew Millikin	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 18 February 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-40 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 15 November 2004 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 021804.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 16 & 34 are objected to because of the following informalities: there is no antecedent basis for "said first position." Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5, 14-15, & 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Ciullo et al. (U.S. Patent No. 6,148,086, hereafter '086).

Claim 1: '086 teaches an apparatus for processing a first digital signal that is arranged in a digital music format, and includes information including at least the sound from one vocalist and musical accompaniment (see abstract; see also column 1, lines 8-13), the apparatus comprising: a source input receptor operable to receive said first digital signal (see Fig. 7, where digital audio stream 706 is inputted to DSP 707); a user input receptor operable to receive a user's first microphone input (see microphone in Figure 7); a first analog-to-digital converter (704) adapted to operate on said first microphone input (701) and to output a second digital signal (706); a first digital processor (707) adapted to operate on said first digital signal (706) to reduce audibility

of said vocalist and to output a first-modified digital signal (709); a second digital processor (703) arranged in-circuit as a mixer to combine said second digital signal and said first-modified digital signal effective to form a left-out channel, and a right-out channel; and a digital-to-analog converter (703) adapted to operate on said left-out channel and said right-out channel to form a stereo analog output signal (210, 710) from said apparatus; and a volume control operable on said stereo analog output signal to effect an audible volume when said stereo analog output signal is applied to a playback device (column 10, lines 7-12).

Claim 2: '086 teaches the apparatus of claim 1, further comprising: a user operable control effective to select a notch frequency range in which reduction of audibility is performed by said first digital processor (column 7, lines 55-58).

Claim 3: '086 teaches the apparatus of claim 1, further comprising: a user operable control effective on said first digital processor to select an amount of reduction in audibility of said vocalist (column 10, lines 7-12).

Claim 4: '086 teaches an apparatus for processing a first analog signal that carries information including at least the sound from one vocalist and musical accompaniment in a left channel and a right channel (401), the apparatus comprising: a source input receptor (703) operable to receive said first analog signal; a user input receptor operable to receive a user's analog input (microphone of Fig. 7); a first analog-to-digital converter (703) adapted to operate on said first analog signal and to output a first digital signal (705); a first signal processor adapted to operate on said first digital signal effective to output information corresponding at least to left-in, right-in, and

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center-in (voice) channels (707); a second analog-to-digital converter (704) adapted to operate on said user's analog input and to output a second digital signal (706); a second signal processor operable as a reducer and arranged to operate on at least a portion of said center-in channel to reduce audibility of said vocalist and to output a center-out channel (Fig. 4); a third signal processor (203, 209) arranged in-circuit as a mixer to combine said second digital signal, said center-out channel, and said left-in channel to form a left-out channel, and to combine said second digital signal, said center-out channel, and said right-in channel to form a right-out channel; and a digital-to-analog converter (703) adapted to operate on said left-out and right-out channels to form a stereo analog output signal from said apparatus.

Claim 5: '086 teaches the apparatus of claim 4, wherein: said first signal processor comprises a digital signal processor (707) adapted to output a signal (709) in a digital music format.

Claim 14: '086 teaches an apparatus (Figs. 2, 7) for converting a multichannel output signal from a music source (401), which signal includes an original lead singer's voice and musical accompaniment, into an input (710) that can be applied to a playback device to form audible musical accompaniment for a Karaoke singer, the apparatus comprising: a first connector adapted to receive said output signal as a first apparatus input signal (703); a second connector adapted to receive a second apparatus input signal from a user's first microphone (704); first circuitry (Figs. 2, 7) adapted at a first configuration to: compare left channel and right channel information carried by said first apparatus input signal and to extract center channel information from said left channel

and said right channel to form a first modified left channel, a center channel, and a first modified right channel (see Fig. 4); process said center channel effective to reduce audibility of said original lead singer's voice in a resulting processed signal (707); mix said second apparatus input signal with said processed signal and said first modified left channel to form a second modified left channel output; and mix said second apparatus input signal with said processed signal and said first modified right channel to form a second modified right channel output (203); an electrical power source adapted to energize said first circuitry (since '086 uses electronics, this is necessarily a part of the teaching of '086); a third connector (output of 209) adapted to transmit an apparatus output signal (210), comprising said second modified left channel output and said second modified right channel output, to a playback device (210); and a volume control operable on said apparatus output signal to effect an audible volume when said apparatus output signal is applied to said playback device (column 10, lines 7-12).

Claim 15: '086 teaches the apparatus of claim 14, wherein: said first circuitry comprises an analog vocal fader circuit (203).

Claim 40: '086 teaches a method for converting an output from a conventional multichannel music source (401), which output carries information including an original lead singer's voice and musical accompaniment, into substantially real-time musical accompaniment for a Karaoke singer, the process comprising the steps of: a) providing a Karaoke ripping device (Figs. 2, 7); b) inputting said output from said music source as a first input signal to said device (401); c) comparing left channel and right channel information carried by said first input signal to determine a center channel (Fig. 4); d)

extracting said center channel from said left channel and said right channel to form a center channel, a modified left channel, and a modified right channel (column 7, lines 39-60; (406, 412, 413)); e) processing said center channel to reduce audible presence of said original singer's voice in a processed signal (column 9, lines 42-65); and f) outputting a combination of said modified left channel, said modified right channel, and said processed signal as an output signal (column 10, lines 41-44).

4. Claims 32-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Ng (U.S. Patent No. 6,328,570, hereafter '570).

Claim 32: '570 teaches a portable apparatus (Figs 1A, 1B) embodied in a hand-held form factor and operable to output an electric signal that is playable through a playback device to create accompaniment for a Karaoke singer (top right of Fig. 3), the apparatus comprising: a housing (Figs. 1A, 1B) adapted to hold a motherboard (Fig. 2; column 4, lines 17-27), carrying first circuitry (see figure), and a power source adapted to enable operation of said first circuitry (155), said housing being arranged to provide external access to one or more connectors comprising a first connector configured to transmit an apparatus output signal (140, 142) and a second connector configured to receive a microphone input (144); and a volume control operable to change a strength of said apparatus output signal (120; column 3, lines 25-34); wherein: said first circuitry is operable to process a music input signal from a music source (microphones surrounding a band, for instance, playing along with internally stored music), said music input signal comprising a lead singer and musical accompaniment, to reduce audible

presence, when played through said playback device, of said lead singer in said apparatus output signal (by reducing the volume of the output of the device, one would necessarily reduce the audible presence of the lead singer).

Claim 33: '570 teaches the apparatus of claim 32, wherein said music source comprises a storage medium (220; column 4, lines 55-64) carried in said housing.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 16 & 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over '086.

Claim 16: '086 teaches the apparatus of claim 14, but does not explicitly teach a multiway switch comprising: an off position operable electrically to decouple said power source from said first circuitry; a play-through position operable to place said first circuitry into a second configuration operable to permit playback of an apparatus output signal comprising said first input signal; and a first vocal fade position operable to place said first circuitry into said first position. However, '086 points out that a prior art device has a discrete on/off switch that turns off when the karaoke singer stops singing in order to be able to turn the devices on and off (column 2, lines 13-32). '086 also

teaches that the prior art device included a partnering function that would play background music while a karaoke singer sang and both background music and original vocals while the karaoke singer wasn't singing in order to make karaoke more accessible to novices (column 1, lines 58-67; column 2, lines 1-8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included these prior art attributes in the invention of '086 in order to have allowed users to have turned the device on and off, to have made karaoke more accessible to novices, and to have allowed users to decide whether they preferred traditional vocal partnering or the new method disclosed in '086 of combining the original vocals with the karaoke singer's vocals.

Claim 27: '086 does not explicitly teach a multiway switch that comprises a second vocal fade position operable to configure said apparatus to produce a first output comprising unmodified playback from said music source for audible perception by said user, and a second output comprising said audible musical accompaniment; however, '086 does teach that in its preferred mode, the device will play the original music and vocals alongside the karaoke singer's vocals (column 9, lines 52-67 & column 10, lines 1-10). '086 also teaches that the original music comprises the instrumental accompaniment (column 1, lines 15-26). Since the device uses a stereo output (210), it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used two speakers, which would result in there being one output that is playing the original music and vocals while the karaoke singer sings, and one speaker which outputs the same thing, which comprises the instrumental

accompaniment, in order to have been able to have utilized the stereo output of the device in Fig. 2.

7. Claims 6-9, 11-13, 17-21, 23-26, 28-29, 31, 34-37, & 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over '086 in view of '570.

Claim 6: '086 teaches the apparatus of claim 4, but does not teach that it can be embodied in a hand-held device adapted to generate one or more outputs. '570 teaches that making karaoke units portable makes them more useful to users (column 1, lines 31-37) and that having multiple output ports allows a portable device to be coupled to external devices (column 3, lines 54-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the device hand-held to have made it more useful to users and to have included multiple outputs in order to allow it to be coupled to external devices.

Claim 7: '570 teaches that using an expansion structure (130) adapted to receive an add-on card (135) and an add-on card (135) structured for reception in said expansion structure and operable to add a component to an electrical path through said apparatus in order to allow users to have extra storage space for song data, audio data, etc. (column 3, lines 35-53). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the expansion structure and add-on card of '570 with '086 in order to have allowed users to have extra storage space for song data, audio data, etc.

Claims 8-9: '570 teaches that the add-on card is programmable (column 5, lines 11-12) and that it can contain programs or games (column 4, lines 41-43). Thus, the card is capable of comprising software that would interact with the processor (210) in order to have implemented a digital signal processor to reduce audibility of said singer's voice or to have produced vocal effects in an output similar to those produced by effects processor (250) of '570. Additionally, since the add-on card is merely an extension of the on-board memory (220), it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the add-on card to have allowed for other types of extensions to the device, such as additional processors, memory, etc.

Claims 11-13: '570 teaches that add-on cards can be used to allow for extensions of devices, as described in rejections of claims 8-9 above, and in combination with the fact that the device of '570 already has multiple microphone inputs (144), multiple audio outputs (140, 142), and both internal (110) and external (see abstract) displays, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have allowed for extensions of these on add-on cards.

Claims 17-19, 21, & 23-24: See claims 7-9 and 11-13 above. Regarding claim 18, since the add-on card of '570 is intended to interface with the electronics of the main device, it would have to have a jumper of some sort in order to function. Regarding claim 24, a volume control can be found in-circuit in '570 (120; column 3, lines 25-34).

Claim 20: '570 teaches that music data may be stored in compressed format, such as MIDI or LZW (column 2, lines 2-5).

Claim 25: See claim 6 above.

Claim 26: Since the device described in '570 is portable, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the device less than about 6 inches high, less than about 4 inches wide, and less than about 2 inches thick. Additionally, in *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

Claims 28-29: '570 teaches that the processor included is programmable (column 2, lines 6-10). '086 teaches that it is desirable to be able to adjust the volume and operating frequency range of the lead singer's voice (column 10, lines 7-10; column 7, lines 55-58). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have allowed the processors of '086 to be programmed by end users in order to permit them to adjust the volume and operating frequency range of the lead singer's voice.

Claim 31: '570 teaches that the add-on card can be connected to a computer in order to allow data to be downloaded from the Internet to the cartridge (Fig. 4; column 5, lines 25-35).

Claim 34: See claim 16 above.

Claims 35-37 & 39: See claims 7, 8, 18, and 11 above.

8. Claims 10, 22, 30, & 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over '086 and '570 as applied to claims 7, 17, and 35 above, and further in view of Sherman et al. (U.S. Patent Application Publication 2002/0051119, hereafter '119).

'086 and '570 teach all the limitations of claims 7, 17, and 35, but do not explicitly teach that the add-on card can comprise a nonvolatile memory adapted for record and playback of an output signal. '119 teaches that karaoke performances can be recorded in order to allow users to distribute them to friends and others [0023]. As a result, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the nonvolatile memory embodied on the cartridge of '570 to have recorded karaoke performance output from the device of '086.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Millikin whose telephone number is 571-270-1265. The examiner can normally be reached on M-R 7:30-5 and 7:30-4 Alternating Fridays (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on 571-272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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LINCOLN DOXOVAN
SUPERVISORY PATENT EXAMINER